APPENDIX 5:
CALCULATION OF TIME AND MATERIAL EXPENDITURE FOR WARP-FACED CAMISAS

I. Camisa #99305 (Centro Mallqui code 3-026), type 3Adb; Unknown gender and age
La Cruz (1998), Tomb 8; Ilo-Tumilaca/Cabuza culture.

Warp: camisa 121 cm long x 2 = 242 cm
Weft: 97 widening to 103 weft width (semi-trapezoidal by spreading the warps)
average width: 100 cm
26 warps/cm (upper and lower warps) average;
7 wefts/cm average
Neck split 34 cm in total (front 18.5 and back 15.5 cm);
arm opening 18 cm
Quality score = 8.5

1. loom preparation and warping process:

prepare loom: 72 minutes (12 + 28 + 32 minutes, see §4.8)
warping: 206 minutes (total width 100 cm x 20.6 min/10 cm avrg)
total: 278 minutes = 4.6 hours

2. weaving:

242 cm total length – 20 cm finish area = 222 cm
222 cm: 4.5 cm/hour (average weaving time) =
49.3 hours of weaving
+ 8 hours to finish 20 cm of weaving with needle
total: 57.3 hours

3. plying:

warp length and time:
242 cm total length + 6% compensation = 256.5 cm
256.5 cm x 26 warps/cm x 100 cm total width =
6669 metres of plied warps
6669 metres: (21.8 plied metres/10 min. = ply average) =
305.9 of 10 minute-units = 51 hours

weft length and time:
100 cm average weft width x 7 weft/cm x 242 cm total length =
1694 metres of plied wefts
1694 metres: (21.8 plied metres/10 cm = ply average) =
77.7 of 10 minute-units = 13 hours

warp and weft length and time:
6669 metres warp + 1694 metres weft =
8363 metres of plied yarn
51 hours warp plying + 13 hours weft plying
total: 64 hours

4. spinning:

8363 metres of plied yarn x 2 ply = 16,726 metres x 1.1 (compensation) = 18,398.6 metres in total of spun yarn
18,398.6 metres: (17.4 spun metres/10 min = spin average) =
1057.4 of 10 min-units
total: 176.2 hours

<table>
<thead>
<tr>
<th>total time and material required for the production of camisa #99305</th>
</tr>
</thead>
<tbody>
<tr>
<td>18,398.6 metres of spun yarn = 176.2 hours 58.3 %</td>
</tr>
<tr>
<td>8363 metres of plied yarn = 64.0 hours 21.2 %</td>
</tr>
<tr>
<td>time loom preparation and warping = 4.6 hours 1.5 %</td>
</tr>
<tr>
<td>total time for weaving camisa = 57.3 hours 19.0 %</td>
</tr>
<tr>
<td>total time: = 302.1 hours 100 %</td>
</tr>
<tr>
<td>total amount of spun yarn: = 18.4 km</td>
</tr>
<tr>
<td>+ considerable amount of time for cross-knit loop embroidery</td>
</tr>
<tr>
<td>of both lateral seams and two neck plaques</td>
</tr>
</tbody>
</table>
II. Camisa #99211 (Centro Mallqui code 01-1014.01), type 6A, worn by adult woman
La Cruz (1993), Tomb 5; Ilo-Tumilaca and possibly Tiwanaku affiliation.

Warp: camisa 85 cm long x 2 = 170 cm total warp length
Weft: 84 cm widening to 90 cm weft width
(semi-trapezoidal by spreading the warps),
average width 87 cm.

22 warps/cm (upper and lower warps) average;
5 wefts/cm average
Neck split 30 cm in total; arm opening 22.5 cm

Quality score = 5.5

1. loom preparation and warping process:

<table>
<thead>
<tr>
<th>Time Activity</th>
<th>Total Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare loom</td>
<td>72 minutes</td>
</tr>
<tr>
<td>Warping</td>
<td>179 minutes</td>
</tr>
<tr>
<td>Total</td>
<td>251 minutes</td>
</tr>
</tbody>
</table>

2. weaving:

170 cm total length – 20 cm finish area = 150 cm
150 cm: 4.5 cm/hour (average weaving time) =
33.3 hours of weaving
+ 8 hours to finish 20 cm of weaving with needle

Total: 41.3 hours

3. plying:

**Warp length and time:**
170 cm total length + 6% compensation = 180.2 cm
180.2 cm x 22 warps/cm x 87 cm total width = 3449 metres of plied warps
3449 metres: (21.8 plied metres/10 minutes = ply average) =
158.2 of 10 minute-units = 26.4 hours

**Weft length and time:**
87 cm average weft width x 5 weft/cm x 170 cm total length = 739.5 metres of plied wefts
739.5 metres: (21.8 plied metres/10 cm = ply average) = 33.9 of 10 minute-units = 5.7 hours

**Warp and weft length and time:**
3449 metres warp + 739.5 metres weft =
4188.5 metres of plied yarn
26.4 hours warp plying + 5.7 hours weft =
Total: 32.1 hours

4. spinning:

4188.5 metres of plied yarn x 2 ply = 8377 metres x 1.1
(compensation for shortening of yarn by plying procedure) =
9214.7 metres in total of spun yarn
9214.7 metres: (17.4 spun metres/10 min = spin average) =
529.5 of 10 min-units

Total: 88.3 hours

<table>
<thead>
<tr>
<th>Total Time and Material Required for the Production of Camisa #99211</th>
</tr>
</thead>
<tbody>
<tr>
<td>4188.5 metres of spun yarn</td>
</tr>
<tr>
<td>9214.7 metres of plied yarn</td>
</tr>
<tr>
<td>Time loom preparation and warping</td>
</tr>
<tr>
<td>Total time for weaving camisa</td>
</tr>
<tr>
<td>Total time:</td>
</tr>
<tr>
<td>Total amount of spun yarn:</td>
</tr>
</tbody>
</table>
III. Camisa #02568 (Centro Mallqui code 00/918-1072.05),
style 5B, adolescent woman
La Cruz (1993), Tomb 15; Ilo-Tumilaca/Cabuza culture.

Warp: camisa 97.5 cm long x 2 = 195 cm total warp length
Weft: 80.5 widening to 114 weft width (semi-trapezoidal);
average width: 97.3 cm
46 warps/cm (upper and lower warps) average;
9 wefts/cm average
Neck split 37 cm in total (front and back 18.5 cm);
arm opening 16 cm
Quality score: 10.5

1. loom preparation and warping process:
prepare loom: 72 minutes (12 + 28 + 32 minutes)
warping: 200 minutes (total width 97.3 cm x 20.6 min/10 cm avg)
total: 272 minutes = 4.5 hours

2. weaving:
195 cm total length – 20 cm finish area = 175 cm
175 cm: 4.5 cm/hour (average weaving time) =
38.9 hours of weaving
+ 8 hours to finish 20 cm of weaving with needle
total: 46.9 hours

3. plying:
warp length and time:
195 cm total length + 6% compensation =
206.7 cm total warp length
206.7 cm x 46 warps/cm x 97.3 cm total width =
9251.3 metres of plied warps
9251.3 metres: (21.8 plied metres/10 minutes average) =
424.4 of 10 minute-units = 70.7 hours

weft length and time:
97.3 cm average weft width x 9 weft/cm x 195 cm total length =
1707.6 metres of plied wefts
1707.6 metres: (21.8 plied metres/10 cm average) =
78.3 of 10 minute-units = 13.1 hours

warp and weft length and time:
9251.3 metres (warp) + 1707.6 metres (weft) = 10,959.1 metres of plied yarn in total
70.7 hours (warp) + 13.0 hours (weft) =
total: 83.8 hours

4. spinning:
10,959.1 metres of plied yarn x 2 ply = 21,918.2 metres x 1.1 =
24,110.0 metres in total of spun yarn
24,110.0 metres: (17.4 spun metres/10 min average) =
1385.6 of 10 min-units = 230.9 hours
total: 230.9 hours

<table>
<thead>
<tr>
<th>total time and material required for the production of camisa #02568</th>
</tr>
</thead>
<tbody>
<tr>
<td>24,110.0 metres of spun yarn = 230.9 hours 62.1 %</td>
</tr>
<tr>
<td>10,959.1 metres of plied yarn = 83.8 hours 22.6 %</td>
</tr>
<tr>
<td>time loom preparation and warping = 4.5 hours 1.3 %</td>
</tr>
<tr>
<td>estimated time for insertion discont. warps = 5.0 hours 1.4 %</td>
</tr>
<tr>
<td>total time for weaving camisa = 46.9 hours 12.6 %</td>
</tr>
<tr>
<td>total time: 372.1 hours 100 %</td>
</tr>
<tr>
<td>total amount of spun yarn: 24.1 km</td>
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</tbody>
</table>